

REMARKS

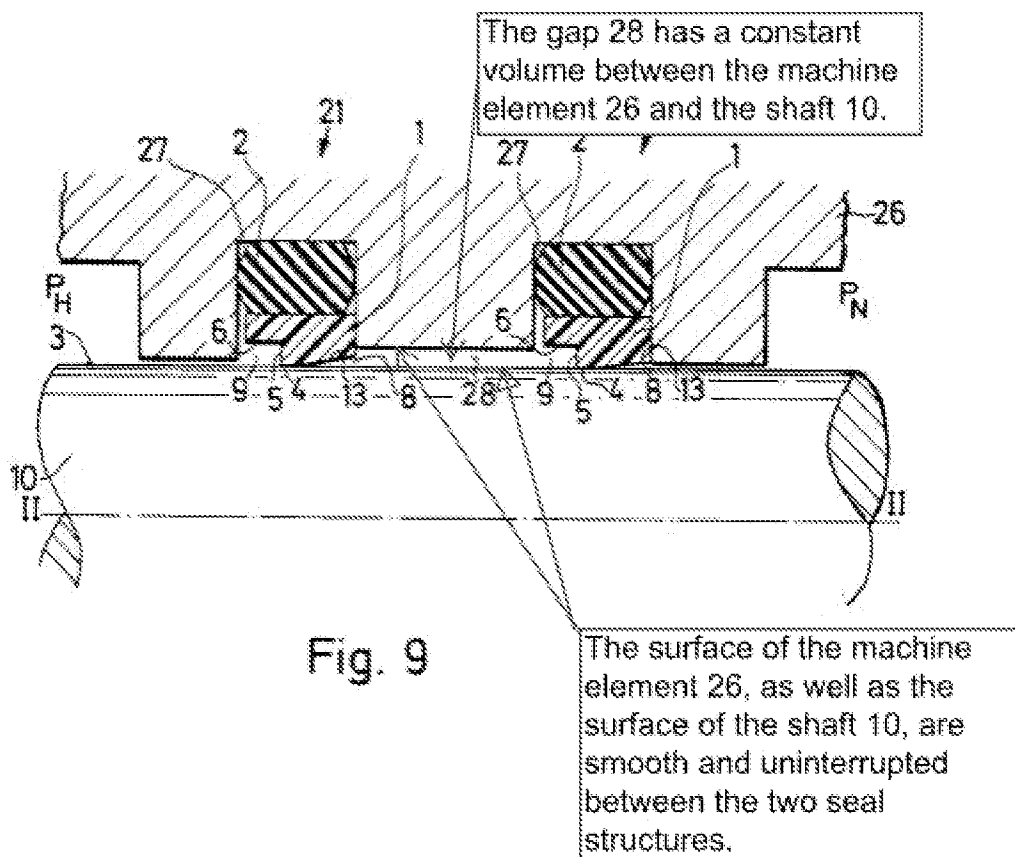
Receipt of the office action mailed October 18, 2011 is acknowledged. Claims 1-6 are pending in the application. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. §102(b) as being anticipated by Edlund (U.S. Patent No. 3,942,806). Claims 3 and 6 are rejected as obvious over Edlund in view of Balsells (U.S. Patent No. 6,161,838). In keeping with the foregoing amendments and the following argument, Applicants respectfully request reconsideration and allowance of the rejected claims.

Claim 1 is amended and now positively recites, in part, a main seal means and a sub-seal means disposed between two seal surfaces, with the sub-seal means being located closer to a higher-pressure region than the main seal means. A pressure variation reducing means is disposed between the main seal means and the sub-seal means and having a variation reducing space connected only to a gap formed between the two seal surfaces, with the variation reducing space being closed by the main seal means and the sub-seal means such that the variation reducing space is disconnected from atmosphere. The variation reducing space is formed by a concave portion formed in one of the two seal surfaces. The variation reducing space has a volume, and the volume is larger than the gap formed between the two seal surfaces. The amendment to claim 1 is fully supported at least by paragraphs [0039] and [0065], and therefore does not constitute a new matter.

In accordance with an exemplary aspect, when the variation reducing space has a volume, and the volume is larger than the gap formed between the two seal surfaces, pressure variations transmitted from the sub-seal means toward the main seal means can be reduced in the variation reducing space. Consequently, it is possible to inhibit a rapid change in the pressure of the gas surrounding the main seal means. The claimed invention can be used with gases having a high permeability with respect to the rubber member, without the occurrence of a blister phenomenon in the main seal means, thus preventing or inhibiting any reduction of the sealing ability of the main seal means.

The action alleges that Edlund discloses a variation reducing space formed between the main seal means and the sub-seal means. However, Edlund merely discloses an annular or ring-shaped passage surrounding the shaft 10. This annular space or passage has a substantially constant cross-sectional area or volume, and completely lacks a variation reducing space, much less a variation reducing space formed by a concave portion formed in one of the

two seal surfaces. This constant cross-sectional area or volume is readily visible in Fig. 9 of Edlund, which is reproduced below in annotated form, and which shows the shortcomings of the reference:



Consequently, Edlund lacks a concave portion formed by one of the two seal surfaces, Edlund lacks a pressure variation reducing space, and Edlund lacks a variation reducing space having a volume that larger than the gap formed between the two seal surfaces. Consequently, Edlund cannot anticipate claim 1.

Moreover, Edlund cannot support a proper *prima facie* case of obviousness with respect to claim 1. First, the limitations at issue are wholly missing from the reference. Second, Edlund expressly teaches that the space 28 performs an important function, in that the pressure potential within the space 28 must be allowed to build, which in turn allows leaking oil to be returned past the gap 8 toward the high pressure space. See Col. 7, lines 23-33. Any attempts to modify the space 28 to include a pressure variation reducing space formed by a concave portion of one of the sealing surfaces would prevent pressure from building in the space 28.

Thus, the needed modification(s) would impair the functionality of the device if not destroy the express teachings of the reference altogether. The secondary Balsells reference cannot cure these deficiencies. Consequently, there can be no proper *prima facie* case of obviousness with respect to claim 1, and claim 1 is in allowable form.

Claims 2 and 3 depend from claim 1, and therefore claims 2 and 3 are also allowable.

Claim 4, which is amended to correct a minor typographical error, recites, in part, a main seal a sub-seal disposed between the two seal surfaces, the sub-seal disposed closer to a higher-pressure region than the main seal, a concave groove formed in the sub-seal, and a gap formed between the two seal surfaces adjacent the sub-seal. An enclosed pressure variation reducing space is disposed between the main seal and the sub-seal and in flow communication with the gap, with the pressure variation reducing space closed by the main seal and the sub-seal. The pressure variation reducing space is formed at least in part by a concave portion formed in either of the two seal surfaces and between the main seal and the sub-seal, with the concave portion forming a volume arranged to inhibit occurrence of a blistering phenomenon in the main seal.

By comparison, as shown by the annotated Fig. 9 from Edlund reproduced above, the reference completely lacks a concave portion formed by one of the two seal surfaces, and consequently the reference cannot have a pressure variation reducing space as claimed by claim 4. Additionally, as outlined above, there can be no proper suggestion to modify Edlund to reach claim 4 without changing the principles of operation of the reference, and/or without destroying the express teachings of the reference. Accordingly, claim 4 is in allowable form.

Claims 5 and 6 depend from claim 4, and therefore claims 5 and 6 are also allowable.

In view of the foregoing, the above-identified application is in condition for allowance. In the event there are any remaining issues that the Examiner believes can be resolved by telephone, the Examiner is respectfully invited to contact the undersigned attorney at (312) 474-6300.

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Respectfully submitted,

/David C. Read, Reg. No. 39,811/

David C. Read

Registration No.: 39,811

MARSHALL, GERSTEIN & BORUN LLP

233 S. Wacker Drive

6300 Willis Tower

Chicago, Illinois 60606-6357

(312) 474-6300

Attorney for Applicants